

C.) REMARKS

This Response is filed in response to the Office Action dated July 25, 2007.

Upon entry of this Response, claims 1-28 will be pending in the Application, with claims 16-28 withdrawn as being directed to a non-elected invention.

In the outstanding Office Action, the Examiner rejected claims 1, 2, 5, 10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Tomlinson (U.S. Patent No. 4,090,567) hereinafter "Tomlinson"; rejected claims 3 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Tomlinson in view of King (U.S. Patent No. 1,604,290) hereinafter "King"; rejected claims 4, 6, and 8-10 as being unpatentable over Tomlinson in view of Waldrum (U.S. Patent No. 4,892,255) hereinafter "Waldrum"; rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Manicatide et al. (U.S. Patent No. 3,777,978) hereinafter "Manicatide"; and rejected claims 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Tomlinson in view of Baker et al. (U.S. Patent No. 5,385,208) hereinafter "Baker".

The present invention has been clarified in that in claim 1, a flexible conduit has a first end secured in fluid communication with the vessel and an unsupported second end. Also, claim 3 has been clarified that the release mechanism is configured for separation of the conduit from a vessel during airborne operation of the airborne craft. Support for these amendments may be found, inter alia, in the figures, such as Figure 2 and paragraph [0029]. No new matter is added by these amendments to the claims.

Rejections under 35 U.S.C. 103

A. Rejection of claims 1, 2, 5, 10, and 12

The Examiner rejected claims 1, 2, 5, 10, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Tomlinson.

Specifically, the Examiner stated that

Tomlinson discloses a dispersal system for fire suppression material for use with an airborne craft, the system comprising a vessel 10 holding fire suppressant, the vessel being secured within or adjacent to an airborne craft, a dispenser for controllably dispensing the material from the vessel, and a flexible conduit 18 having a first end secured in fluid communication with the vessel and a second

end for controllably directing the dispensed material adjacent to ground level. The second end being sufficiently remote from the airborne craft would have been a matter of design choice since such a modification would have involved a mere change in the length of the conduit 18, which is generally recognized as being within the level of ordinary skill in the art. Also, one having ordinary skill in the art would recognize that the second end must be remote from the aircraft for precise spraying.

Applicant respectfully traverses the rejection of claims 1, 2, 5, 10, and 12 under 35 U.S.C. § 103(a).

Tomlinson, as understood, is directed to a fire fighting apparatus including a quick-connect and disconnect fire-fighting fluid tank, pump, a fire fighting control station, and a nozzle boom swiveled near the control station.

In contrast, independent claim 1 recites a dispersal system for fire suppression material for use with an airborne craft, the system comprising: a vessel holding at least one fire suppressant material therein, the vessel being secured within or adjacent to an airborne craft; a dispenser for controllably dispensing the at least one fire suppressant material from the vessel; and a flexible conduit, the conduit having a first end secured in fluid communication with the vessel and an unsupported second end disposed sufficiently remote from the airborne craft for flow of the dispensed material to be substantially unaffected by an air stream associated with operation of the airborne craft, the second end adapted for controllably directing the dispensed material adjacent to ground level. (emphasis added).

Several of the features recited by Applicant in independent claim 1 are not taught or suggested by Tomlinson. First, Tomlinson does not teach or suggest a flexible conduit 18, as argued by the Examiner. At best, Tomlinson teaches discharge line 16 extending between tank 10 and nozzle boom 18 that may be flexible. However, Tomlinson teaches that nozzle boom 18 is rigid, as clearly shown in Figure 1. Were nozzle boom 18 not of rigid construction, cylinder 32, which is connected to nozzle boom 18 at pivot 38 could not be used to controllably direct fluid flowing through nozzle boom 18.

Second, Tomlinson does not teach or suggest the conduit having a first end secured in fluid communication with the vessel and an unsupported second end disposed sufficiently remote

from the airborne craft for flow of the dispensed material to be substantially unaffected by an air stream associated with operation of the airborne craft as recited by Applicant in independent claim 1. As disclosed in the present invention, paragraph [0029], backwash, which refers to an air stream produced by the helicopter rotors, may affect the flow of fire suppressant exiting the dispensing end when the distance of the dispensing end from the rotor is less than about fifty feet. In addition, Tomlinson identifies at col. 2, lines 13-14, "The helicopter that may be used in this invention is a Sikorsky S64F." According to a United States Department of Agriculture Forest Service General Technical Report PNW-20 dated 1974, entitled "Helicopters For Logging Characteristics, Operation, and Safety Considerations," page 8, a Sikorsky S-64F helicopter has a fuselage length of 70 feet, an overall length, with rotors, of 89 feet, main rotor diameter of 72 feet and tail rotor diameter of 16 feet. A copy of this document is being provided as Exhibit A. Accordingly, nozzle boom 18 must be about 12 feet in length for the tip of the nozzle boom to coincide with the end of the tail rotor 8, as approximately shown in Figure 1 of Tomlinson. This means that for the flow of nozzle boom 18 to extend an additional fifty feet to avoid backwash, the total length of the nozzle boom would need to be about 62 feet long, or nearly as long as the entire length of the fuselage of the Sikorsky S-64F helicopter. Applicant asserts that such extended length of nozzle boom 18 is clearly excessive, from a practical operating standpoint, and therefore, Applicant respectfully disputes Examiner's assertion that

The second end being sufficiently remote from the airborne craft would have been a matter of design choice since such a modification would have involved a mere change in the length of the conduit 18, which is generally recognized as being within the level of ordinary skill in the art.

Applicant submits that dependent claims 2, 5, 10, and 12 are distinguishable from Tomlinson for at least the following reasons. To begin, dependent claims 2, 5, 10, and 12 are believed to be distinguishable from Tomlinson as depending from what are believed to be allowable independent claim 1 as discussed above.

Therefore, in view of the above, dependent claims 2, 5, 10, and 12 are believed to be distinguishable from Tomlinson and therefore are not anticipated nor rendered obvious by Tomlinson. In addition, claims 2, 5, 10, and 12 recite further limitations that distinguish over the applied art. In conclusion, it is respectfully submitted that claims 1, 2, 5, 10, and 12 are not anticipated nor rendered obvious by Tomlinson and are therefore allowable.

B. Rejection of claims 3 and 11

The Examiner rejected claims 3 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Tomlinson in view of King.

Specifically, the Examiner stated that

King teaches a dispersal system for fire suppression material for use with an airborne craft comprising a vessel 4 holding fire suppressant and a conduit 19 having a first end secured in fluid communication with the vessel and a second end for controllably directing the dispensed material adjacent to ground level in which the conduit has release mechanism (threads 18) for easy removal. King also teaches a valve 21 in the second end of the conduit to control dispensing of the material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tomlinson by providing a release mechanism as recited for easy removal of the conduit and incorporating a valve into the second end of the conduit to control the spray as taught by King.

Applicant respectfully traverses the rejection of claims 3 and 11 under 35 U.S.C. § 103(a).

Tomlinson, as understood, is directed to a fire fighting apparatus as previously discussed.

King, as understood, is directed to an apparatus for distributing fire preventing and extinguishing composition from an airplane.

Applicant submits that dependent claims 3 and 11 are distinguishable from Tomlinson and/or King for at least the following reasons. To begin, dependent claims 2, 5, 10, and 12 are believed to be distinguishable from Tomlinson and/or King as depending from what is believed to be allowable independent claim 1 as discussed above. In addition, claims 3 and 11 recite further limitations that distinguish over the applied art. For example, claim 3, as amended, recites a release mechanism secured to the airborne craft interposed between the vessel and the conduit for separation of the conduit from the vessel during airborne operation of the airborne craft. Removing nozzle 19 by unscrewing threads 18 during operation of airplane would require a "wing-walking" maneuver by the pilot, or worse, which would certainly not be contemplated, much less performed, by one of ordinary skill in the art.

Therefore, in view of the above, dependent claims 3 and 11 are believed to be distinguishable from Tomlinson and/or King and therefore are not anticipated nor rendered obvious by Tomlinson and/or King. In conclusion, it is respectfully submitted that claims 3 and 11 are not anticipated nor rendered obvious by Tomlinson and/or King and are therefore allowable.

C. Rejection of claims 4, 6, and 8-10

The Examiner rejected claims 4, 6, and 8-10 as being unpatentable over Tomlinson in view of Waldrum.

Specifically, the Examiner stated that

Waldrum shows a dispersal system for fire suppression material for use with an airborne craft, the system comprising a vessel holding fire suppressant, the vessel being secured within or adjacent to an airborne craft, a dispenser (comprising 16 and 18) for controllably dispensing the material from the vessel wherein the dispenser has a plurality of vanes 132 as recited in claim 4 and the dispenser rotates as recited in claim 6. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tomlinson by providing a dispenser having vanes and making the dispenser rotatable as taught by Waldrum to discharge the material with maximum kinetic energy and with minimum turbulence (column 3, lines 43-44).

Applicant respectfully traverses the rejection of claims 4, 6, and 8-10 under 35 U.S.C. § 103(a).

Tomlinson, as understood, is directed to a fire fighting apparatus as previously discussed.

Waldrum, as understood, is directed to a centrifugal applying device for use with an aircraft.

Applicant submits that dependent claims 4, 6, and 8-10 are distinguishable from Tomlinson and/or Waldrum for at least the following reasons. To begin, dependent claims 4, 6, and 8-10 are believed to be distinguishable from Tomlinson and/or Waldrum as depending from what is believed to be allowable independent claim 1 as discussed above. In addition, Applicant notes Waldrum is directed to a centrifugal applying device. As such, any material passing

along the rotating vanes 132 of Waldrum is not controllably applied, but slung randomly in response to the rotational speed of the vanes 132. Since the centrifugal vanes are disposed at substantially equal angles from each other, the material is collectively slung in all directions. Therefore, centrifugal vanes 132 cannot be properly characterized as controllably dispensing (claim 1) and directing (claim 4) fire suppressant material through the vanes, as recited in the claimed invention.

Therefore, in view of the above, dependent claims 4, 6, and 8-10 are believed to be distinguishable from Tomlinson and/or Waldrum and therefore are not anticipated nor rendered obvious by Tomlinson and/or Waldrum. In conclusion, it is respectfully submitted that claims 4, 6, and 8-10 are not anticipated nor rendered obvious by Tomlinson and/or Waldrum and are therefore allowable.

D. Rejection of claim 7

The Examiner rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Manicatide in view of Tomlinson.

Specifically, the Examiner stated that

Manicatide et al. shows a dispersal system for fire suppression material for use with an airborne craft, the system comprising a vessel A holding fire suppressant, the vessel being secured within or adjacent to an airborne craft, a dispenser 5 for controllably dispensing the material from the vessel, and a conduit 13 having a first end secured in fluid communication with the vessel and a second end for controllably directing the dispensed material adjacent to ground level, wherein the dispenser non-symmetrically directs material in a direction from a central axis. Manicatide et al. do not disclose the conduit being flexible. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Manicatide et al. by providing a flexible as taught by Tomlinson in order to be able to adjust the position of the of the conduit.

Applicant respectfully traverses the rejection of claim 7 under 35 U.S.C. § 103(a).

Manicatide, as understood, is directed to a system for dispensing particulate materials from an airplane.

Tomlinson, as understood, is directed to a fire fighting apparatus as previously discussed.

Applicant submits that dependent claim 7 is distinguishable from Manicatide and/or Tomlinson for at least the following reasons. To begin, dependent claim 7 is believed to be distinguishable from Manicatide and/or Tomlinson as depending from what is believed to be allowable independent claim 1 as discussed above.

Therefore, in view of the above, dependent claim 7 is believed to be distinguishable from Manicatide and/or Tomlinson and therefore is not anticipated nor rendered obvious by Manicatide and/or Tomlinson. In conclusion, it is respectfully submitted that claim 7 is not anticipated nor rendered obvious by Manicatide and/or Tomlinson and is therefore allowable.

E. Rejection of claims 13-15

The Examiner rejected claims 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Tomlinson in view of Baker.

Specifically, the Examiner stated that

Baker et al. teaches a dispersal system for fire suppression material from an aircraft comprising a vessel 12, a dispensing head 40 and a shroud 30 surrounding the head 40 to act as a physical guard for the head 40. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tomlinson by providing a shroud to surround the valve and dispenser head as taught by Baker et al. to provide protection for the valve and dispenser head. The shapes recited in claims 14 and 15 would have been matters of design choice since such modifications would involved a mere change in the shape of an object which is generally recognized as being within the level of ordinary skill in the art.

Applicant respectfully traverses the rejection of claims 13-15 under 35 U.S.C. § 103(a).

Tomlinson, as understood, is directed to a fire fighting apparatus as previously discussed.

Baker, as understood, is directed to an airborne foam delivery apparatus adapted to be carried as a slung bucket beneath a helicopter.

Applicant submits that dependent claims 13-15 are distinguishable from Tomlinson and/or Baker for at least the following reasons. To begin, dependent claims 13-15 are believed to be distinguishable from Tomlinson and/or Baker as depending from what is believed to be allowable independent claim 1 as discussed above.

Furthermore, “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination.” See Manual of Patent Examining Procedure, 8th Edition (MPEP), Section 2143.01.

The Examiner is reminded that “[i]f the proposed modification or combination of the prior art would change the principle or operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” See MPEP, Section 2143.01.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

See Manual of Patent Examining Procedure, 8th Edition (MPEP), Section 2143.03.

For example, incorporating the Baker apparatus into Tomlinson requires the Baker apparatus be suspended from the rigid boom of Tomlinson, which is not only redundant for Tomlinson, as the tank is still retained in Tomlinson, but the weight distribution of Baker as suspended from the boom of Tomlinson would render Tomlinson non-airworthy, necessarily teaching away from Tomlinson.

Therefore, in view of the above, dependent claims 13-15 are believed to be distinguishable from Tomlinson and/or Baker and therefore is not anticipated nor rendered obvious by Tomlinson and/or Baker. In conclusion, it is respectfully submitted that claims 13-15 are not anticipated nor rendered obvious by Tomlinson and/or Baker and is therefore allowable.

CONCLUSION

In view of the above, Applicant respectfully requests reconsideration of the Application and withdrawal of the outstanding objections and rejections. As a result of the remarks presented

herein, Applicant respectfully submits that claims 1-15 are not anticipated by nor rendered obvious by Tomlinson, King, Waldrum, Manicatide, Baker, or their combination and thus, are in condition for allowance. As the claims are not anticipated by nor rendered obvious in view of the applied art, Applicant requests allowance of claims 1-15 in a timely manner. If the Examiner believes that prosecution of this Application could be expedited by a telephone conference, the Examiner is encouraged to contact the Applicant.

The Commissioner is hereby authorized to charge any additional fees and credit any overpayments to Deposit Account No. 50-1059.

Respectfully submitted,
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Dated: October 24, 2007

Exhibit A